

5. AN ACCOUNT OF FISHES DISCOVERED OR OBSERVED IN MADEIRA SINCE THE YEAR 1842*. BY THE REV. R. T. LOWE, M.A.

Family ZENIDÆ.

1. ZEUS CONCHIFER. *Lilacino-cinereus, capite inermi; thorace pinnaque dorsali analique utrinque scutatis; spinis dorsalibus anterioribus brevissime filamentosis; pinnis ventralibus 1 + 5-radiatis; caudali lanata.*

D. 9 v. 10 + 25 v. 26; A. 2 + (1 + 25 v. 26); P. 13; V. + 5;

- C. $\frac{1 + \text{I.} + \text{V.}}{1 + \text{I.} + \text{VI.}}$; M. B. 7; Vertebrae, 13 abd. + 21 caud. = 34.

An example of this very fine new Dory was communicated, with a short notice, to the Zoological Society in 1845 †. The row of large and remarkable naked bony scutellæ on each side, at the base of the dorsal and anal fins, and along the breast or ventral line, afford a very striking character. They resemble the depressed shells of a *Fissurella* seen in profile, and are beautifully radiato-striate, with a bright iridescent rose or lilac lustre, like the inside of a *Trigonia*. The umbo forms a smooth short strong spine or recurved prickle. The dark thumb-mark on the middle of the sides is present, as in *Z. Galus*, L. Three examples only have occurred, measuring from eighteen inches to a little more than two feet in length.

The supposed affinity between *Zeus* and *Oreosoma*, Cuv. ‡, is much corroborated by this fish.

2. ARGYROPELICUS OLFERSII. (*Sternoptyx Olfersii*, Cuv. R. An. (2nd edit.) ii. 316. t. 13. f. 2.)

A single example, caught with a boatscoop on the surface of the water in the Bay of Funchal, June 6, 1845.

The name of *Pleurothysis*, proposed in the 'Fishes of Madeira,' p. 64, for this portion of the Cuvierian genus *Sternoptyx*, has been anticipated by that of *Argyropelicus*, previously assigned to a Mediterranean species by the Italian naturalist Cocco, and adopted in the 'Fauna Italica' by the Prince of Canino.

I have now succeeded in obtaining both the Cuvierian species of *Sternoptyx* in this part of the Atlantic; though *St. diaphana* (Le St. d'Herman, Cuv.) cannot, like *Arg. Olfersii*, be perhaps fairly claimed at present to belong to the Madeiran fauna §.

The Atlantic and Mediterranean species of *Argyropelicus* may be thus distinguished:

- ARG. OLFERSII, Cuv. *capite altiore, altitudine dimidium longitudinis (dempta pinna caudali) superante; parte postica (caudali) abbreviata; capite duplo altiore quam longo; sterno*

* Proc. Zool. Soc., June 1843, part 11. p. 81.

† *Ibid.* part 13. p. 103.

‡ Fishes of Madeira, Preface, p. xii.

§ Proc. Zool. Soc. part 11. p. 85.

postice in forcipem, præoperculo inferne in aculeum simplicem desinente. (St. Olfersii, Cuv. l. c.)

ARG. HEMIGYMNUS, Cocco. *Corpore angustiore, altitudine dimidii longitudinis (dempta pinna caudali) æquante; parte postica (caudali) elongata; capitis longitudine altitudinem æquante; sterno postice in angulum simplex acutum, præoperculo inferne in aculeos duos desinente.* (Arg. hemigygnus v. Sternoptyx mediterranea, Cocco et Buon. Faun. Ital. cum fig.)

This extraordinary group of fishes offers many points of analogy with *Berycidae*.

Fam. LICHIIDÆ.

3. TEMNODON VADIGO. (*Lichia vadigo*, Cuv. et Val. viii. 363. t. 235.)

A single example was taken in February 1846, but it appeared to be quite unknown to the fishermen, and is therefore to be regarded as a mere straggler in these seas.

If the genus *Temnodon* be retained, this fish has precisely the same claims to a place in it as the common "Anchova" of Madeira (*T. saltator*, Cuv. et Val.).

Fam. SCOMBRIDÆ.

4. SCOMBER COLIAS (Gm.), Cuv. et Val. viii. 39. t. 209. (*The Spanish Mackerel*, Yarr. Brit. Fish. i. 131.)

In April 1844, the market in Funchal was plentifully supplied with these fishes for two or three successive days. They were said to have been brought from Porto Santo.

5. AUXIS VULGARIS, Cuv. et Val. viii. 139. t. 216.

A single example, February 3, 1845. Not quite unknown to the fishermen, but its occurrence said to be a mere chance.

6. PELAMYS SARDA, Cuv. et Val. viii. 149. t. 217.

October 27, 1844: a single example, called "Sarda" by the fishermen, to whom it is not absolutely unknown, though, like the last, of merely casual occurrence.

Fam. TÆNIOIDÆ.

7. TRACHYPTERUS GRYPHURUS. *Corpore elongato, macula posteriore laterali spatium tertiam partem totius longitudinis æquante a basi pinnæ caudalis amota; pinnarum radiis scabris; linea laterali inermi, postice supra marginem ventralem desinente.*

D. 5+166; P. 10 v. 11; V. 1+5; A. 0; C. $\frac{VIII.}{5}$; M. B. 6.

Intermediate between *T. falx* and *T. iris* (of Cuvier and Valenciennes' 'Histoire,' vol. x. pp. 333, 341) approaching, perhaps, nearer to the latter, but differing in its deeper shape ($D = \frac{L}{5\frac{1}{2}}$, instead

of $\frac{L}{9 \text{ or } 10}$), and in the backward position of the third dark side-spot. The ventral fins are short, only equalling one-twelfth of the body without the caudal fin, and the four first produced rays of the first dorsal are equal in length to the ventral fins. The lateral line ends as in M.M. Cuvier and Valenciennes' figure (t. 297) of *T. iris*, but is quite unarmed. The ventral line is serrulate, and the whole surface, particularly towards the ventral line, is finely shagreened or graulate; the granulations becoming stronger towards the ventral line, as in the same figure.

In shape and proportions it agrees better with *T. falx*, but differs in several important particulars from M.M. Cuvier and Valenciennes' description of that fish.

The only individual examined of this beautiful and extraordinary fish occurred in June 1845, and has been added by me to the collection of the Cambridge Philosophical Society. It was scarcely quite dead when I first saw it, and was in the most perfect state of preservation. Another *Trachypterus* had occurred in June 1844, and was probably the same species; but the example was unfortunately thrown away by the person to whom it had been mis-sent without my seeing it. It was said to have been about three feet long.

The whole body is pure bright silver, appearing as if frosted from the fine granulations of the surface. The fins are of a delicate scarlet or vermilion, the lower point or angle of the caudal being tipped, and the hinder end of the dorsal edged with black. On the sides are three blackish oval or elliptic spots. This example was twenty-five inches long, exclusive of the caudal fin, which resembles a bat's or griffin's wing, and is erected in a fan-like manner; the lower lobe or portion being suppressed or undeveloped, and only indicated by the presence of five short spinules or abortive rays.

Fam. LABRIDÆ.

8. *LABRUS LARVATUS*. *Flavus, capite humerisque griseo-nigrescente larvatis; pinna dorsali antice caudaque utrinque infra lineam lateralem rectiusculam unimaculatis; corpore oblongo elongato; dentibus validis crebris, antice biseriatis; pinnæ caudalis apicibus analisque ventraliumque margine cœruleo-nigris.*

D. 17+13; A. 3+11; P. 16; V. 1+5; C. $\frac{3 \text{ v. } 4 + \text{VI.}}{2 \text{ v. } 3 + \text{V.}}$; B. M. 5;

Squamæ lin. lat. 42—45.

In general appearance, shape, and the peculiar straightness of the lateral line, this fine species much resembles *Cossyphus Darwini*, Jen.; but it is a true *Labrus*, with the dorsal and anal fins naked, and the preopercle quite entire. Its nearest allies are therefore *L. mixtus* and *L. Scrofa*; from which however, besides other characters, the numerous strong teeth distinguish it. A single example only has occurred, measuring seventeen inches and a quarter in length.

Fam. CHEIRONECTIDÆ.

Gen. CHAUNAX, Lowe.

Gen. Char. Corpus subcubico-oblongum, sufflabile, nudum, cute præsertim ad ilia ventremque flaccidissima laxa; antice obesum, postice abrupte attenuatum subcompressum. Caput osseum magnum subtetrahedrum, superne nuchaque latum planatum, utrinque s. ad genas declive; oculis lateralibus, spatio interoculari convexo; ore rictuque amplissimis transversis plagio-plateis s. depressis. Dentes intermaxillares vomerinique palatinique parvi scobinati. Nares simplices (nec pedicellatæ nec tubulosæ). Spiracula (foramina branchialia) postica s. ad ilia pone pinnarum pectoralium axillas. Pinna dorsalis unica; pectoralibus (pedicellatis) carnosis; ventralibus jugularibus spathulatis carnosis; analis postica; caudalis simplex truncata. Cirri, præter unicum in fossula internasali, nulli.

9. CHAUNAX PICTUS, Lowe in Trans. Zool. Soc. iii. part 4. p. 340. t. 51.

D. 11; A. 5; P. 11; V. 4; C. $\frac{1+IV.}{2+II.}$

Species adhuc unica. *Hab.* in mari Maderensi.

I have nothing to add to the full account of this curious fish above referred to, except by way of correction to the second paragraph in p. 344, which has been erroneously printed, and should stand thus:

“Whilst *Cheironectes* seems its most natural, *Halieutæa* is its nearest technical ally. Agreeing with *Lophius* in the wide transverse mouth, and in the backward position of the breathing orifices in the flanks, but with *Cheironectes* more in shape, in the granular or velvety roughness of the skin, and in colour; it differs from both, and approaches *Halieutæa*, in the absence of crests or cilia on the back, and in the single dorsal fin. In these last two points, and in the roughness of the skin, it agrees with *Halieutæa*, but differs in its *Diodon*-like shape, and in the position of the breathing-holes considerably behind, instead of above or before, the axils of the pectoral fins.”

Fam. SCOPELIDÆ.

Gen. PHÆNODON.

Gen. Char. Caput magnum compressum, oculis magnis, rostro brevissimo obtuso, rictu magno pone oculos longe diducto, mento subtus ad symphysin cirro barbato. Dentes intermaxillares uniseriati; anteriores (5 v. 6 utrinque) validi tenues prælongi laniarii subrecurri remoti distincti, extrorsum supra labia invicem claudentes; ossibus palati dentibus minoribus uniseriatis, lingua biseriatis, armatis. Opercula simplicia plana. Corpus elongatum compressum nudum? s. exsquameum; abdomine punctis argenteis (ut in SCOPELO) seriatis. Linea lateralis recta pinnæque fere ut in SCOPELO, pectoralibus brevioribus.

10. PHÆNODON RINGENS. (*Scopelus barbatus*, nob. MS. olim.)

1^{ma} D. 16; 2^{da} D. 0; A. 16; V. 7; P. 9; C. $\frac{9 + \overline{\text{I.} + \overline{\text{IX.}}}}{6 + \overline{\text{I.} + \overline{\text{VIII.}}}$; M. B. ?

Closely allied to *Scopelus*, but with the head and teeth of *Echiostoma*, which it also resembles in its single cartilaginous beard or barbule.

A single example occurred in May 1845, and was placed by me in the collection of the Cambridge Philosophical Society, under the MS. name of *Scopelus barbatus*. It was seven inches long, and the above fin-formula is taken from it.

I have been favoured by the Duc de Leuchtenberg this winter with the opportunity of examining a second individual, procured from a fisherman. It agreed in all important details with the former, but was only from five to six inches long, and had a much shorter barbule.

Both these examples were entirely devoid of scales, but from certain appearances I am inclined to attribute this defect to injury.

The colour is a uniform brownish or coal-black, except the silver pits, which are disposed in rows along the throat and belly, exactly as in *Scopelus*.

11. SCOPELUS MADERENSIS (Suppl. in Trans. Zool. Soc. iii. part 1. p. 14).

Appears to be distinguished from *Sc. Humboldti* by the forwarder (medio-dorsal) position of its first dorsal fin, and by the long pectoral fins, which are contained from four to four and a half times in the whole length, and reach to the end of the base of the first dorsal fin. The anal fin has fourteen rays.

Examples have occurred of two other forms or species, with shorter pectoral fins, in one of which the anal fin has fourteen, and in the other twenty-two rays. In the first of these, the length of the pectoral fin is one-sixth of the whole length of the fish ($P = \frac{L}{6}$); in the second it is one-fifth and four-sevenths of the same ($P = \frac{L}{5\frac{4}{7}}$); *i. e.* rather longer. But further investigations will be requisite before these can be safely proposed as species. In general habit, colour, and appearance, they agree with *S. maderensis*.

12. METOPIAS TYPHLOPS (Proc. Zool. Soc. 1843, vol. xi. p. 90).

Another example has occurred of this most curious and anomalous little fish. It was brought to me in May 1849, from the same place, Magdalena, at which I obtained the former. It is of much larger size, measuring three inches and a half in length. I find nothing whatever to correct in the account above referred to, except that the maxillary teeth, instead of being "uniseriate," are in a scobinate or brush-like band in both jaws; narrow in the upper, broader in the lower jaw.

The acquisition of a second example, confirming the peculiar characters before set down, is the more satisfactory, from the former

having been unfortunately destroyed by the wasting of the alcohol in which it was kept.

Fam. GADIDÆ.

13. *PHYCIS FURCATUS*, Flem. (not Bowdich); Yarr. Brit. Fish. ed. 1. ii. 201. (*Le Merlus barbu*, Duham. Cuv. R. An. ed. 2. ii. p. 335.)

A single example occurred May 8, 1845; not quite agreeing with the figure in the 'British Fishes,' yet certainly distinct from the common "Abrotea" of Madeira (*P. mediterraneus*, Lar.), of which, on the other hand, the *P. furcatus* of Bowdich (Excurs. p. 122. f. 28) was unquestionably a mere accidentally fork-tailed individual.

Fam. ECHENEIDÆ.

14. *ECHENEIS VITTATA*, Suppl. to Synops. in Trans. Zool. Soc. vol. iii. part 1. p. 17, and Hist. Fish. Mad. p. 77. t. 11.

The acquisition of an adult example measuring 2 feet $6\frac{1}{2}$ inches in length, has proved the fish above described to have been a young individual of *E. vittata*, Rüppell (Neu. Wirbel. p. 82). It is fortunate that the happy coincidence of name necessitates no change or confusion in rendering justice to my learned friend's prior claim in the establishment of this well-marked species. The lateral dark band or *vitta* becomes indistinct in adult individuals. In the large full-grown example above mentioned it had disappeared entirely.

Fam. MURÆNIDÆ.

Gen. LEPTORHYNCHUS, nob.

Gen. Char. Caput scolopaciforme, callo elongato distinctum; maxillis in rostrum tenue productis, utraque dentibus minutissimis limæ instar scabra; rictu pone oculos diducto. Nares oculis contiguæ approximatae, simplices nec tentaculatae. Oculi magni. Corpus nudum anguilliforme compressum, gracile, elongatum; postice longissime attenuato-productum filiforme, apice acuto. Aperturæ branchiales sat magnæ, ante pinnas pectorales oblique deorsum fissæ. Pinnæ pectorales distinctæ lanceolatae, sat magnæ; pinna dorsali ad nucham paullo ante, anali ad gulam paullo post pinnas pectorales incipiente; utraque usque ad apicem caudæ continuata, membranacea, nec cute cooperta, sed radiis sat validis distinctis.

15. *LEPTORHYNCHUS LEUCHTENBERGI*. (*The Snipe-Eel*.)

I am indebted for an opportunity of describing this interesting new type of *Murænida* to the favour of His Imperial Highness the Duc de Leuchtenberg, to whom an example was brought by a fisherman in January last. It approaches the *Anguillidæ* by its well-developed pectoral fins. The prolonged beak-like muzzle also reminds one of that of *Leptognathus*, Swainson. The unique individual examined, which measured 2 feet 9 inches in length, scarcely half an inch in height, and four lines in thickness, is included in the extensive col-

lections formed with so much scientific ardour and discrimination by His Imperial Highness the Duc de Leuchtenberg, during his late six months' residence in Madeira.

Fam. BALISTIDÆ.

16. *MONACANTHUS AURIGA*. *Hispidus, cauda utrinque dense hispido-villosa; pallide olivaceo-murinus, sublutescens, fuscolutoso-maculatus v. interrupte longitudinaliter subfasciatus; fasciis luteis inconspicuis evanescentibus 3 v. 4 ab oculis antice oblique radiantibus; radiis 1 v. 2 anticis dorsalis primæ aliquando in filamentum productis.*

1^{ma} D. 1; 2^{da} D. 31; A. 30 v. 31; P. 13 v. 14; C. 1 + X. + 1.

From eight to ten or eleven inches long. On each side, towards the base of the caudal fin, is an oblong patch, like plush or velveteen, of close thickset hairs or bristles. The occasional production of the second or first two rays of the second dorsal fin is perhaps sexual. Such examples have the muzzle rather longer and more produced before the eyes than those which have not the elongated dorsal filament. They are perhaps the *M. filamentosus* of M. Valenciennes, to whose figure and description, however, in MM. Webb and Berthelot's 'Canarian Fishes,' I regret I have not access.

Several examples have occurred, chiefly in the autumn, during the last five or six years, of this previously in Madeira unobserved or unrecorded species.

SQUALIDÆ.

Fam. ALOPECIDÆ.

17. *ALOPIAS VULPES*, Buon. (*The Fox Shark*, Yarr. ii. 379.)

An example occurred this spring of unusual size, measuring eighteen feet in length, of which the tail was ten feet. The skin was preserved by the Duc de Leuchtenberg.

Fam. SPINACIDÆ.

18. *CENTROPHORUS SQUAMOSUS*, Müll. und Henle, p. 90, with a figure.

The *Ramudo* or *Raimudo* of Madeira, not unfrequently taken off the Dezertas at a depth of twelve or fourteen "*linhas*," i. e. from 350 to 400 fathoms, belongs apparently to the above species, the habitat of which was unknown to its describers, MM. Müller and Henle. I have only examined female examples, and the fishermen profess themselves to be entirely unacquainted with the male, which I have however formerly (March 10, 1838) once seen, though without opportunity for a close or accurate examination, and so perhaps without remarking any spine near the tips of the claspers or ventral fin-appendages. The individuals examined were five or six feet long, but the fish is said to grow to a much larger size.

Madeira, May 25, 1850.